

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL SEARCH REPORT**  
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>12486620/JEH/GC</b>	<b>FOR FURTHER ACTION</b> <div style="float: right; font-size: small;">see Form PCT/ISA/220 as well as, where applicable, item 5 below.</div>	
International application No. <b>PCT/AU2004/001129</b>	International filing date ( <i>day/month/year</i> ) <b>20 August 2004</b>	(Earliest) Priority Date ( <i>day/month/year</i> ) <b>21 August 2003</b>
Applicant <b>VIRAX DEVELOPMENT PTY LTD et al</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of **6** sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
  - a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
  - b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.
2. ☒ Certain claims were found unsearchable (See Box No. II).
3. ☐ Unity of invention is lacking (See Box No. III).
4. With regard to the title,

☐ the text is approved as submitted by the applicant.  
☒ the text has been established by this Authority to read as follows:  
**Poxvirus vector encoding prostate specific antigens for treatment of prostate cancer.**
5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.  
☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the drawings,
  - a. the figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.  
☐ as selected by this Authority, because the applicant failed to suggest a figure.  
☐ as selected by this Authority, because this figure better characterizes the invention.
  - b. ☒ none of the figures is to be published with the abstract.

**BEST AVAILABLE COPY**

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001129

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 21  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
Claim 21 is to an antibody to an epitope formed on the expression products of the genetic vaccine constructs. The possible expression products identified in the specification are all known in the prior art, such as PSA, PSMA and PAP. It is not clear from the specification where the invention resides in this claim.
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

BEST AVAILABLE COPY

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001129

**Box No. IV Text of the Abstract (Continuation of item 5 of the first sheet)**

A genetic vaccine construct comprising a poxvirus vector which incorporates and, on administration to a subject, expresses in a cell of said subject a sequence of nucleotides encoding a prostate-specific polypeptide, wherein said poxvirus vector does not productively infect a subject. The genetic vaccine is for treatment of prostate cancer. The prostate specific polypeptide is preferably rat prostatic acid phosphatase, and is preferably xenogenic to the subject. The poxvirus vector is an avipox virus vector, preferable a fowl poxvirus vector. The genetic vaccine construct may also encode for one or more cytokines.

BEST AVAILABLE COPY

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001129

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. C12N 15/863, A61K 39/00, A61P 35/00, C12N 15/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
WPIDS, CA MEDLINE: prostate, prostatic, acid phosphatase, pap, pox, fowlpox, avipox, orthopox, vaccine, immunis, immunology, DNA, nucleic, polynucleic, polynucleotide, encoding

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2002/040059 A2 (American Foundation for Biological Research) 23 May 2002 whole of document	1-3, 5, 8-20, 22-27, 29, 32-36
X	WO 1998/046769 A1 (Dendreon Corporation) 22 October 1998 whole of document	1-6, 8-11, 13- 20, 22-35
X	Fong L <i>et al</i> , "Induction of Tissue-Specific Autoimmune Prostatitis with Prostatic Acid Phosphatase Immunization", <i>The Journal of Immunology</i> , 1997, 159(7):3113-3117 whole of document	1-11, 13-20, 22-35
X	WO 1998/004727 A1 (Therion Biologics Corporation <i>et al</i> ) 5 February 1998 whole of document	1-3, 5, 8-20, 22-27, 29, 32-36

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
22 October 2004Date of mailing of the international search report  
29 OCT 2004Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaaustralia.gov.au  
Facsimile No. (02) 6285 3929Authorized officer  
GARETH COOK  
Telephone No : (02) 6283 2541

BEST AVAILABLE COPY

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001129

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 1997/003203 A (Therion Biologics Corporation <i>et al</i> ) 30 January 1997 whole of document	1-3, 5, 8-20, 22-27, 29, 32-36
X	WO 2003/047506 A (The Government of the United States of America, represented by The Secretary, Department of Health and Human Services) 12 June 2003 whole of document	1-3, 5, 8-20, 22-27, 29, 32-36
X	WO 2001/049317 A (Aventis Pasteur Limited) 12 July 2001 whole of document	1-3, 5, 8-20, 22-27, 29, 32-36
A	Hwang C <i>et al</i> , "Prospects and limitations of recombinant poxviruses for prostate cancer immunotherapy", <i>Current Opinion in Molecular Therapeutics</i> , 1999, 1:471-479 whole of document	
A	Fong L <i>et al</i> , "Dendritic Cell-Based Xenoantigen Vaccination for Prostate Cancer Immunotherapy", <i>The Journal of Immunology</i> , 2001, 167:7150-7156 whole of document	
P, A	US 2004/142890 A (McNeel) 22 July 2004 whole of document	

BEST AVAILABLE COPY

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2004/001129

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO	2002/040059	AU	39441/02		
WO	1998/046769	AU	68979/98	EP	973 916
		CA	2 286 477	US	2004/141991
WO	1998/004727	AU	37268/97	EP	954 593
		CA	2 261 989	US	2003/003079
WO	1997/003203	CA	2 226 436	EP	1 162 272
		EP	840 791	US	6 165 460
WO	2003/047506	CA	2 468 258	EP	1 461 073
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					

BEST AVAILABLE COPY